

DAUPHIN ISLAND BAY, ALA.

LETTER

FROM

THE SECRETARY OF THE ARMY

TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED MAY 31, 1951, SUBMITTING A REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND AN ILLUSTRATION, ON A REVIEW OF REPORT ON DAUPHIN ISLAND BAY, ALA., WITH A VIEW TO DETERMINING WHETHER ANY MODIFICATION OF THE EXISTING PROJECT IS ADVISABLE AT THIS TIME, WITH PARTICULAR REFERENCE TO PROVIDING A CHANNEL CONNECTION TO MISSISSIPPI SOUND. THIS INVESTIGATION WAS REQUESTED BY RESOLUTIONS OF THE COMMITTEE ON PUBLIC WORKS, HOUSE OF REPRESENTATIVES, AND THE COMMITTEE ON PUBLIC WORKS, UNITED STATES SENATE, ADOPTED ON JUNE 2, 1949, AND FEBRUARY 25, 1949, RESPECTIVELY.

MARCH 18, 1952.—Referred to the Committee on Public Works and ordered to be printed, with an illustration.

LETTER OF TRANSMITTAL

DEPARTMENT OF THE ARMY,  
Washington 25, D. C., March 5, 1952.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES:

DEAR MR. SPEAKER: I am transmitting herewith a report dated May 31, 1951, from the Chief of Engineers, United States Army, together with accompanying papers and an illustration, on a review of report on Dauphin Island Bay, Ala., with a view to determining whether any modification of the existing project is advisable at this time, with particular reference to providing a channel connection to Mississippi Sound. This investigation was requested by resolutions of the Committee on Public Works, House of Representatives, and the Committee on Public Works, United States Senate, adopted on June 2, 1949, and February 25, 1949, respectively.

In accordance with section 1 of Public Law 14, Seventy-ninth Congress, the views of the State of Alabama are set forth in the enclosed communication.

Although the Bureau of the Budget advises that there is no objection to the submission of the report to Congress, it states that any estimate of appropriation for the initiation of this project, if authorized by Congress, must be justified in accordance with the policy set forth in the President's letter to the Secretary of the Army dated July 21, 1950, concerning curtailment of civil public works. The complete views of the Bureau of the Budget are contained in the attached copy of its letter.

Sincerely yours,

FRANK PACE, Jr.,  
*Secretary of the Army.*

#### COMMENTS OF THE BUREAU OF THE BUDGET

EXECUTIVE OFFICE OF THE PRESIDENT,  
BUREAU OF THE BUDGET,  
*Washington 25, D. C., February 15, 1952.*

The honorable the SECRETARY OF THE ARMY

(Through the Budget Officer for the Department of the Army.)

MY DEAR MR. SECRETARY: Receipt is acknowledged of your letter dated June 13, 1951, submitting the proposed report of the Chief of Engineers on a review of reports on Dauphin Island Bay, Ala., requested by resolutions of the Committee on Public Works, United States Senate, and the Committee on Public Works, House of Representatives, adopted on February 25, 1949 and June 2, 1949, respectively.

I am authorized by the Director of the Bureau of the Budget to advise you that there would be no objection to the submission of the report to Congress.

The President in his letter to you, dated July 21, 1950, directed that all civil public works be considered with the objective, as far as practical, of deferring, curtailing, or slowing down those projects which do not directly contribute to defense or to civilian requirements essential in the changed international situation. Therefore, any estimate of appropriation for the initiation of this project, if authorized by the Congress, must be justified in accordance with the policy set forth in the President's letter referred to above or any modifications thereof.

Sincerely yours,

WM. F. McCANDLESS,  
*Assistant Director for Estimates.*

COMMENTS STATE OF ALABAMA

STATE OF ALABAMA,  
STATE PLANNING BOARD,  
Montgomery 4, Ala., May 16, 1951.

Maj. Gen. LEWIS A. PICK,  
*Chief of Engineers, Department of the Army,  
Office of the Chief of Engineers, Washington 25, D. C.*

DEAR GENERAL PICK: Receipt is acknowledged of your proposed report on a review of reports on Dauphin Island Bay, Ala.

The Alabama State Planning Board concurs with the recommendations made, and believes that such an improvement will be of much benefit to the State of Alabama.

Sincerely yours,

W. O. DOBBINS, Jr.,  
*Director.*

REPORT OF THE CHIEF OF ENGINEERS, UNITED STATES ARMY

DEPARTMENT OF THE ARMY,  
OFFICE OF THE CHIEF OF ENGINEERS,  
Washington 25, D. C., May 31, 1951.

Subject: Dauphin Island Bay, Ala.

To: The Secretary of the Army.

1. I submit herewith for transmission to Congress the report of the Board of Engineers for Rivers and Harbors in response to resolution of the Committee on Public Works of the United States Senate, adopted February 25, 1949, requesting the Board to review the report on Dauphin Island Bay, Ala., submitted in House Document No. 333, Seventy-sixth Congress, first session, with a view to determining whether any modification of the existing project is advisable at this time, with particular reference to providing a channel connection to Mississippi Sound; and also a resolution of the Committee on Public Works of the House of Representatives, adopted June 2, 1949, requesting the Board to review the reports on Dauphin Island Bay, Ala., submitted in House Document No. 333, Seventy-sixth Congress, first session, with a view to determining whether any modification of the existing project is advisable at this time, with particular reference to providing a channel connection to Mississippi Sound.

2. After full consideration of the reports secured from the district and division engineers, the Board recommends the modification of the existing project for Dauphin Island Bay, Ala., to provide for an anchorage basin 7 feet deep and 500 feet square at Dauphin Island village, with an entrance channel of like depth 100 feet wide and about 8,300 feet long extending to the 7-foot contour in Mississippi Sound, generally in accordance with the plan of the district engineer and with such modifications as in the discretion of the Chief of Engineers may be advisable; at an estimated cost to the United States of \$56,000 for construction and \$6,000 annually for additional cost of maintenance; subject to the condition that local interests give assurances satisfactory to the Secretary of the Army that they will: (a) provide without cost to the United States all lands, easements, rights-of-way, and suitable spoil-disposal areas for initial work, and for subsequent maintenance

when and as required; (b) provide and maintain a suitable landing open to all on equal terms; and (c) hold and save the United States free from damages due to the construction and maintenance of the project.

3. After due consideration of these reports, I concur in the views and recommendations of the Board.

LEWIS A. PICK,  
Major General,  
Chief of Engineers.

# REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS

DEPARTMENT OF THE ARMY,  
BOARD OF ENGINEERS FOR RIVERS AND HARBORS,  
Washington 25, D. C., February 2, 1951.

Subject: Dauphin Island Bay, Ala.

To: The Chief of Engineers, United States Army.

1. This report is submitted in response to the following resolutions adopted February 25 and June 2, 1949, respectively:

*Resolved by the Committee on Public Works of the United States Senate, That the Board of Engineers for Rivers and Harbors, created under section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the report on Dauphin Island Bay, Alabama, submitted in House Document Numbered 333, Seventy-sixth Congress, first session, with a view to determining whether any modification of the existing project is advisable at this time, with particular reference to providing a channel connection to Mississippi Sound.*

*Resolved by the Committee on Public Works of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review the reports on Dauphin Island Bay, Alabama, submitted in House Document Numbered 333, Seventy-sixth Congress, first session, with a view to determining whether any modification of the existing project is advisable at this time, with particular reference to providing a channel connection to Mississippi Sound.*

2. Dauphin Island Bay, Ala., a shallow inlet about three-quarters of a mile wide and 1.75 miles long, is on the mainland side of the eastern end of Dauphin Island which is one of the barrier islands along the Gulf coast west of the entrance to Mobile Bay. The northwestern end of Dauphin Island Bay opens into Mississippi Sound which lies between Dauphin Island and the mainland. The mean tidal range in the vicinity is 1.1 feet. The existing Federal project for Dauphin Island Bay provides for a channel 7 feet deep and 150 feet wide from that depth in Mobile Bay to an anchorage basin of the same depth, 600 feet long and 500 feet wide, in the marsh just north of Fort Gaines on the eastern tip of Dauphin Island, and a channel 4 feet deep and 40 feet wide from the anchorage basin to the 3-foot hydrographic contour in Dauphin Island Bay; and for the construction of a jetty to protect the entrance channel on the north, if found advisable, to reduce maintenance dredging costs. No work has been done on this project. A small anchorage basin about 400 feet long, 100 to 200 feet wide, and 3 to 6 feet deep, just north of Fort Gaines, was constructed by the United States Coast Guard during World War II. It is no longer maintained by the Coast Guard, but it is used as a harbor of refuge by small craft.

3. The area tributary to Dauphin Island Bay includes Dauphin Island and the nearby sea-food grounds. The village on the southern

shore of the bay had a population of 226 in 1940. The inhabitants of the village are engaged in sea-food production. Commerce consists of shipments of out-bound sea-food and in-bound supplies but there is no record of the tonnage handled. About 25 commercial fishing boats, owned by residents of Dauphin Island, use the bay regularly. In addition, many boats from the commercial fishing fleet of about 400 craft, operating out of the mainland harbors on Mississippi Sound, use the bay for anchorage during the fishing season. Boats in the commercial fleet have drafts from 2 to 7 feet.

4. Local interests originally requested a channel 85 feet wide and 10 feet deep from that depth in the bay to a basin 200 feet square and 10 feet deep near the village. They have since stated that a channel 7 or 8 feet deep would be adequate. Some interests advocate a channel from Mississippi Sound through Dauphin Island Bay to Mobile Bay, which would accommodate commercial small craft drawing 6 or 7 feet of water. Local interests state that the desired channel and basin at the village would provide increased safety and security for the inhabitants of the island; encourage the establishment of supply houses, sea-food processing plants, shipbuilding and repair shops, and recreation facilities on the island; and would facilitate the transfer of sea foods to freight boats. The continuous channel from Mississippi Sound to Mobile Bay via Dauphin Island Bay would provide a shorter protected route between mainland harbors on the sound and the Gulf of Mexico and would make Dauphin Island Bay a harbor of refuge for small boats operating in the Gulf. Local interests offer to provide rights-of-way and spoil-disposal areas.

5. The district engineer reports that depths in the eastern half of the bay are generally less than 3.5 feet. Commercial craft are forced to anchor from 1,500 to 2,000 feet offshore. He has considered two plans of improvement. Plan A consists of an anchorage basin 7 feet deep and 500 feet square at the village with a channel having the same depth, 100 feet wide and 8,300 feet long, extending to the 7-foot contour in Mississippi Sound. Plan B consists of a channel 7 feet deep, 100 feet wide, and 13,350 feet long extending from the 7-foot contour in Mississippi Sound to the western end of the authorized project channel for Dauphin Island Bay; the enlargement of the authorized channel from 4 by 40 feet to 7 by 100 feet between Dauphin Island Bay and the authorized anchorage basin at Fort Gaines, a distance of 6,000 feet; and a side channel 7 feet deep, 100 feet wide, and 3,300 feet long terminating at an anchorage basin 500 feet square, of the same depth, in the vicinity of Dauphin Island village. Although both plans are economically feasible, his calculations show that the ratio of the incremental benefits of plan B over plan A and the corresponding annual charges is 0.11. He, therefore, considers plan A the most suitable. The cost of construction for this plan is estimated at \$62,700, all of which, including \$6,700 for navigation aids, would be Federal. The annual carrying charges would be \$8,900. The district engineer estimates that 9,450 boat-hours, now consumed in traveling to more distant ports or in transferring cargoes and personnel, would be saved and presumably used for fishing if the improvement were provided. He computes the net value of the increased sea-food catch at \$20,800. The benefit-cost ratio is 2.34. He concludes that the improvement is warranted and recommends the modification of the existing project for Dauphin Island Bay in

accordance with plan A as shown in his report subject to the conditions that local interests will provide without cost to the United States all rights-of-way and spoil-disposal areas, and hold and save the United States free from claims for damages. The division engineer concurs.

6. Local interests were notified of the views and recommendations of the reporting officers and were invited to submit additional information to the Board. No communications have been received.

#### VIEWS AND RECOMMENDATIONS OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS

7. The Board of Engineers for Rivers and Harbors concurs generally in the views of the reporting officers. The proposed channel and anchorage basin will meet the needs of craft engaged in the fishing industry in Mobile Bay and Mississippi Sound. The basin also will be large enough to provide an anchorage and a harbor of refuge for the numerous transient commercial and recreational craft traversing the area. The benefits are sufficient to warrant the expenditure required for the improvements.

8. The Board recommends the modification of the existing project for Dauphin Island Bay, Ala., to provide for an anchorage basin 7 feet deep and 500 feet square at Dauphin Island village, with an entrance channel of like depth 100 feet wide and about 8,300 feet long extending to the 7-foot contour in Mississippi Sound, generally in accordance with the plan of the district engineer and with such modifications as in the discretion of the Chief of Engineers may be advisable; at an estimated cost to the United States of \$56,000 for construction and \$6,000 annually for additional cost of maintenance; subject to the condition that local interests give assurances satisfactory to the Secretary of the Army that they will: (a) provide without cost to the United States all lands, easements, rights-of-way, and suitable spoil-disposal areas for initial work, and for subsequent maintenance when and as required; (b) provide and maintain a suitable landing open to all on equal terms; and (c) hold and save the United States free from damages due to the construction and maintenance of the project.

For the Board:

J. S. BRAGDON,  
*Major General,*  
*Chairman.*

#### REPORT OF THE DISTRICT ENGINEER

##### SYLLABUS

Local interests request that the existing project for Dauphin Island Bay, Ala., be modified to provide for a channel connection to Mississippi Sound from Dauphin Island village on the north shore of Dauphin Island.

The district engineer finds that an entrance channel and an anchorage basin are urgently needed in Dauphin Island Bay for the protection and economical operation of the extensive commercial fishing fleet engaged in oystering and shrimping in the adjacent waters, and that the residents of Dauphin Island village, a permanent settlement of some 200 to 300 persons, are without adequate means of transportation between the island and the mainland. He therefore recommends that the existing Federal project be modified to provide for a channel 7 feet deep and 100 feet wide from the 7-foot depth contour in Mississippi Sound to a 500-foot square anchorage basin adjacent to the north shore of Dauphin Island at Dauphin

Island village, at an estimated first cost to the United States of \$56,000 (to be expended by the Corps of Engineers), with \$6,000 annually thereafter for maintenance in addition to that now authorized.

CORPS OF ENGINEERS,  
OFFICE OF THE DISTRICT ENGINEER,  
MOBILE DISTRICT,  
*Mobile, Ala., December 15, 1949.*

Subject: Survey of Dauphin Island Bay, Ala.

To: Division Engineer, South Atlantic Division, Atlanta, Ga.

1. *Authority.*—This report is submitted in compliance with the following resolutions adopted February 25, 1949, and June 2, 1949, respectively:

*Resolved by the Committee on Public Works of the United States Senate, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the report on Dauphin Island Bay, Alabama, submitted in House Document Numbered 333, Seventy-sixth Congress, first session, with a view to determining whether any modification of the existing project is advisable at this time, with particular reference to providing a channel connection to Mississippi Sound.*

*Resolved by the Committee on Public Works of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review the reports on Dauphin Island Bay, Alabama, submitted in House Document Numbered 333, Seventy-sixth Congress, first session, with a view to determining whether any modification of the existing project is advisable at this time, with particular reference to providing a channel connection to Mississippi Sound.*

The duty of preparing the report was assigned to this district by fourth endorsement dated March 28, 1949, from the division engineer, South Atlantic Division.

2. *Report under review.*—The survey report printed in House Document No. 333, Seventy-sixth Congress, first session, recommended a small-craft channel connecting Dauphin Island Bay with Mobile Bay, and a turning basin at the eastern end of Dauphin Island. This improvement was authorized by the River and Harbor Act of March 2, 1945, and is described in paragraph 19.

3. *Scope of survey.*—The report under review is of survey scope, and this report will also be of survey scope, since it can be prepared without extensive additional investigations.

4. A hydrographic and topographic survey was made of Dauphin Island Bay and the adjacent shore line, and the waters between the western end of Dauphin Island Bay and the 7-foot depth contour in Mississippi Sound. Commercial fishermen, pleasure-craft operators, and other small-craft navigation interests were consulted with a view to determining the need for improvements requested and the benefits to be derived therefrom.

5. *Description.*—Dauphin Island Bay, a small inlet about  $1\frac{3}{4}$  miles long and  $\frac{3}{4}$  mile wide, lying between Dauphin and Little Dauphin Islands, is on the west side of the entrance to Mobile Bay, about 30 miles south of Mobile, Ala. The two islands encompassing the bay are about 3 miles south of Cedar Point on the mainland. Longitudinally, the bay lies roughly northwesterly and southeasterly, Dauphin Island forming its southeastern and southwestern shore and Little Dauphin Island its northeastern and northwestern shore. Except for two openings, it is practically landlocked and potentially affords an excellent natural harbor for small boats. At its southeastern end

it connects with Mobile Bay through Pass Drury, a small, unstable inlet 600 feet wide and 2 feet deep, which separates the two islands. At its northwestern end, Dauphin Island Bay connects with Mississippi Sound through an opening which is 2,000 feet wide and ranges in depth up to 6 feet. This opening is the only navigable ingress and egress to the bay. Depths in the bay itself are extremely shallow, the average depth being about  $2\frac{1}{2}$  feet. The bottom is composed of sand, mud, shell, and scattered beds of oysters.

6. Dauphin Island, about 12 miles long east and west and about 0.5 mile wide, is bordered on the east by Mobile Bay, on the north and northeast by Mississippi Sound and Dauphin Island Bay, on the west by Petit Bois Pass (an opening to the Gulf between Dauphin Island and Petit Bois Island), and on the south by the Gulf of Mexico. Its area of about  $5\frac{1}{2}$  square miles consists of woods, marshlands, and sand. The only cultivated areas on the island are the small gardens owned by residents of the village, a small settlement on the north shore of Dauphin Island about  $2\frac{1}{2}$  miles from its eastern end and about 4 miles southeast of Cedar Point. The eastern end of the island, with the exception of tidal marshlands bordering Dauphin Island Bay, averages 5 to 10 feet above mean low water, with sand dunes on the Gulf side rising as high as 40 feet. The marshland bordering the main island on the north averages  $1\frac{1}{2}$  feet above mean low water. Dauphin Island's western end, three-fourths of its length, is a narrow, barren sand spit occasionally covered by storm tides. Little Dauphin Island is only 2 miles long, one-third of a mile wide, and about 4 feet in elevation.

7. The Mobile Harbor ship channel, extending from the Gulf of Mexico to Mobile, lies about 3 miles east of Dauphin Island. It is 32 feet deep and 300 feet wide except across the Mobile Bar, where it is 36 feet deep and 450 feet wide. East of the Dauphin Island group, natural depths in Mobile Bay increase gradually to 6 feet about 2,000 feet from shore, and then increase fairly rapidly to 10 and 20 feet. The 9-foot hydrographic contour is 3,000 to 5,000 feet offshore. At the extreme eastern end of Dauphin Island the 6-foot contour curves inshore to within 200 feet of the beach.

8. A connecting link in the Intracoastal Waterway, between Mobile Bay and Mississippi Sound, known locally as Pass aux Herons, lies about a mile north of Little Dauphin Island, or about halfway between the island and the mainland. It is a dredged channel,  $4\frac{1}{2}$  miles long, with a project depth of 12 feet and a width of 150 feet. A meandering natural channel about 5 feet deep, navigable only by those familiar with the waters, connects the Pass aux Herons channel with Dauphin Island Bay through the latter's northwestern entrance.

9. The mean tidal range in the vicinity of Dauphin Island Bay is 1.1 feet; the maximum, except during hurricanes which occur infrequently, is 4 feet. Abnormally low tides, 1 foot or more below mean low water, are reported to occur in Dauphin Island Bay during periods of prolonged northerly winds, principally in winter.

10. In 1912 the Dauphin Island Railway & Harbor Co., interested in the development of the island, dredged a channel 8 feet deep, 60 feet wide, and about 15,000 feet long from Mississippi Sound through the tidal flats to the shore line of Dauphin Island opposite the village. This channel has almost entirely filled in.

11. The locality described is shown on the accompanying map and on United States Coast and Geodetic Survey Chart 1266.

12. *Tributary area.*—Dauphin Island is the focal point of small-craft marine activities in lower Mobile Bay, east Mississippi Sound, and the Gulf of Mexico south of the island. In geographical extent, the improvement herein considered would directly affect not only the immediate locality, but practically all the coastal waters of Alabama.

13. On the northerly shore of Dauphin Island, about 2½ miles from its eastern end, there is a village (par. 6), which has a population of 226, according to the 1940 census. The inhabitants of this village depend solely on fishing, shrimping, and oystering for their livelihood, their products being sold to dealers and canneries on the mainland. At one time there was a sea-food canning factory on the island, but it closed many years ago and has since been destroyed. With the exception of one or two raw-oyster houses, there are no commercial establishments on the island equipped to handle sea foods. On the eastern extremity of the island is Fort Gaines, an abandoned fort formerly garrisoned by a unit of the Coast Artillery. After its abandonment, the entire Government reservation of 267 acres, including the fort and buildings formerly used as barracks and officers' quarters, was bought by the city of Mobile to be used for recreational purposes. The only road on the island is a semi-improved one extending from the village to Fort Gaines.

14. The principal cities and towns along the coastal waters of Alabama, with pertinent information thereon, are tabulated below:

TABLE 1.—Principal towns in the tributary area

| Locality                    | County       | Population,<br>1940 | Waterway on which<br>located |
|-----------------------------|--------------|---------------------|------------------------------|
| Mobile.....                 | Mobile.....  | 78,720              | Mobile Bay.                  |
| Bayou La Batre.....         | do.....      | 2,000               | Bayou La Batre.              |
| Fairhope.....               | Baldwin..... | 1,845               | Mobile Bay.                  |
| Daphne.....                 | do.....      | 630                 | Do.                          |
| Coden.....                  | Mobile.....  | 300                 | Bayou Coden.                 |
| Bon Secour.....             | Baldwin..... | 550                 | Bon Secour River.            |
| Magnolia Springs.....       | do.....      | 263                 | Fish River.                  |
| Dauphin Island Village..... | Mobile.....  | 226                 | Dauphin Island Bay.          |
| Heron Bay.....              | do.....      | 412                 | Heron Bay.                   |

All the above localities are permanent harbors for small commercial fishing and pleasure craft which navigate the waters in the vicinity of Dauphin Island Bay. Mobile is an important Gulf port and has a number of large manufacturing industries. Bayou La Batre is the sea-food-canning center of Alabama and, along the Gulf coast from Tampa to New Orleans, it ranks second only to Biloxi, Miss., in the volume of sea food handled. A dredged channel 6 feet deep by 100 feet wide extends from Mississippi Sound up Bayou La Batre to the town. In addition to the places shown in table 1, several other points along the coast harbor vessels, but have little or no concentrated population. Such anchorages are used principally by boat operators who live inland. Among these latter places are Dog River and Fowl River on the western shore of Mobile Bay.

15. The coastal waters of Alabama, particularly in the vicinity of Dauphin Island, usually abound with oysters, shrimp, crabs, and food

and game fish. Extensive oyster reefs are located north of Little Dauphin Island near Pass aux Herons and in the lower part of Mobile Bay. Shrimp are caught in lower Mobile Bay, Mississippi Sound, and in the Gulf of Mexico. Fish are obtained from all the tidal waters in the vicinity. Commercial exploitation of sea food is carried on extensively in the waters centered around Dauphin Island, with the greatest activity in the eastern section. Shrimping and oystering are by far the largest sea-food industries. In addition to commercial fishing, the locality is widely known for its pleasure fishing. Fishing parties from Mobile and other more-distant points engage in deep-sea fishing in the Gulf of Mexico and lower Mobile Bay throughout the warm season. To promote the locality's sport-fishing attractiveness, an annual fishing rodeo is held by the Alabama Deep Sea Fishing Rodeo Association, a nonprofit organization of sportsmen. This event, which lasts 3 days, is attended by several hundred fishermen from widely scattered sections of the South who compete for prizes. Fort Gaines is used as a base for the rodeo and, usually, 200 or more boats are anchored nearby. Charter-boat fishing is engaged in by boats based principally at Bayou La Batre. About 20 boats at Bayou La Batre especially equipped for the purpose are used to accommodate parties who fish in the vicinity of Dauphin Island. Such vessels are hired by the hour or day and the operators act as guides. Operators of these boats are reported to receive an estimated gross income of \$50,000 annually in their business. The season generally runs from May through September.

16. A small mail launch, which makes one round trip daily, provides the only regular means of transportation between Dauphin Island and Cedar Point on the mainland, about 4 miles by water. Supplies for the island populace are carried by truck from Mobile or Bayou La Batre to Cedar Point, thence by the mail launch to the village. Otherwise, the inhabitants use privately owned skiffs and small launches for transportation to the mainland. Improved highways connect Cedar Point with Mobile and Bayou La Batre.

17. *Bridges.*—No bridges cross Dauphin Island Bay or the entrances thereto, but for a number of years efforts have been made by various agencies to build a bridge from Cedar Point to Dauphin Island. On July 26, 1949, a referendum of the voters of Mobile County defeated a proposal to construct a bridge from Cedar Point to Dauphin Island which was to be financed by county revenue from tolls and an additional gasoline tax. The tentative alinement of the bridge, as proposed, is shown on the map accompanying this report.

18. *Prior reports.*—Three reports have been made on this locality, but only one has been printed. These reports and data pertinent thereto are tabulated below:

TABLE 2.—*Prior reports*

| Title   | Transmitted to Congress                             | Scope of report          | Character of proposed improvement  | Recommendation of Chief of Engineers |
|---|---|--------------------------|--|--------------------------------------|
| Dauphin Island Bay, Ala., and channel connecting Dauphin Island Bay with the main ship channel across the Mobile Bar.   | Jan. 10, 1921                                       | Preliminary examination. | Channel 30 to 40 feet deep from Gulf of Mexico across Mobile Bar into Dauphin Island Bay; a basin in Dauphin Island Bay 11,300 feet long and 2,000 feet wide; and a channel 10 feet deep from Dauphin Island Bay to Mississippi Sound.   | Unfavorable.                         |
| Channel to Point Chugae, Dauphin Island, Ala., and channel from Point Chugae to the Old Basin, or Indian Mounds, with a view to providing a harbor of refuge. | Apr. 14, 1937                                       | Survey----               | Channel 6 by 100 feet from Mississippi Sound into Dauphin Island Bay and anchorage basin 500 feet square.  | Do.                                  |
| Dauphin Island Bay, Ala., and channel connecting Dauphin Island Bay and Mobile Bay.   | June 9, 1939<br>(H. Doc. 333/76th Cong., 1st sess.) | ---do-----               | Channel 7 by 150 feet from Mobile Bay to anchorage basin 500 by 600 feet of same depth on Dauphin Island north of Fort Gaines, and channel 4 by 40 feet from anchorage basin to 3-foot depth contour in Dauphin Island Bay, also a jetty to protect entrance channel on the north, if found advisable to reduce maintenance-dredging costs. <sup>1</sup> | Favorable.                           |

<sup>1</sup> Existing project, authorized by River and Harbor Act of Mar. 2, 1945.

19. *Existing Corps of Engineers' project.*—The existing project for Dauphin Island Bay, Ala., authorized by the River and Harbor Act of March 2, 1945 (H. Doc. No. 333, 76th Cong., 1st sess.) provides for a channel 7 feet deep and 150 feet wide from that depth in Mobile Bay to an anchorage basin of the same depth 600 feet long and 500 feet wide, sited in the marsh just north of Fort Gaines on Dauphin Island, and a channel 4 feet deep and 40 feet wide from the anchorage basin to the 3-foot hydrographic contour in Dauphin Island Bay; and for the construction of a jetty to protect the entrance channel on the north, if found advisable to reduce maintenance-dredging costs. The present estimate of the initial work required is \$31,600 for dredging and \$87,200 for jetties. Maintenance is estimated at \$5,000 annually. No work has been done on the existing project, nor have there been any prior Corps of Engineers' projects at this locality.

20. *Other improvements.*—Along the eastern shore of Dauphin Island, just north of Fort Gaines, there is a small anchorage basin about 400 feet long, 100 to 200 feet wide, and 3 to 6 feet deep, which was constructed for use by the United States Coast Guard during the recent war. It is no longer maintained as a Coast Guard harbor but is used as a harbor of refuge by fishing boats and other small craft operating in the vicinity. During the fishing rodeo the basin is used by as many of the participating boats as it can accommodate.

21. *Terminal and transfer facilities.*—A wooden pile-and-timber pier, about 400 feet long, extends into Mobile Bay from the eastern end of Dauphin Island near Fort Gaines and the anchorage basin (par. 20). The pier has a ramp at its outer end, and is large enough to accommodate vehicles which may be ferried to the island; however, it is virtually unused except during the 3-day meet of the Alabama

Deep Sea Fishing Rodeo. The location of the pier exposes it to the wave action of lower Mobile Bay and the Gulf, which renders it unsuited much of the time to use by small craft. The pier is not conveniently located for use in transporting supplies and personnel between Cedar Point and Dauphin Island village, and is seldom used for that purpose. One or two small single-plank piers along the shore of Dauphin Island Bay at the village are the only other facilities of this nature in the vicinity.

22. *Improvement desired.*—A public hearing was held July 6, 1949, at Dauphin Island, Ala., to afford local interests an opportunity to state formally the nature and extent of improvements desired, and to present testimony in favor of, or in opposition to, such improvements. The hearing was attended by 31 persons representing the commercial fishing industry. The Alabama Deep Sea Rodeo and the Mobile Chamber of Commerce were also represented. Oral and written testimony submitted during the hearing dealt primarily with the need for a small-craft channel from Mississippi Sound into Dauphin Island Bay and an anchorage basin along the shore of Dauphin Island Bay in the vicinity of the village. The improvement specifically requested by the Dauphin Island Canal Committee (exhibit A of public hearing) consisted of a channel 10 feet deep, 85 feet wide, and about five-eighths mile in length from the vicinity of the village on Dauphin Island to deep water in Dauphin Island Bay, and a basin 200 feet square of the same depth near the shore. During the course of the hearing, members of the canal committee stated that a channel 7 or 8 feet deep at mean low water would probably be adequate. Considerable testimony was presented also in support of a channel from Mississippi Sound to Mobile Bay, by way of Dauphin Island Bay, of adequate dimensions to permit the through passage of commercial small craft drawing 6 or 7 feet of water. The following reasons were advanced in support of the requested improvement:

(a) The residents of Dauphin Island are without adequate means of access by water from Dauphin Island village to Mississippi Sound and the mainland. Small craft entering Dauphin Island Bay must remain several thousand feet offshore to avoid grounding, and the transfer of materials and personnel must be accomplished through the use of skiffs or other flat-bottom boats. Provision of an entrance channel from Mississippi Sound to the shore of Dauphin Island Bay would afford the residents of the island a greater measure of safety and security in times of sickness and distress, and would tend to improve immeasurably the social welfare of the island's population.

(b) A harbor or basin along the shore of Dauphin Island in the vicinity of the village would facilitate transportation of personnel and supplies between Dauphin Island and the mainland, and would encourage the establishment of supply bases, sea-food processing plants, shipbuilding and repair shops, and recreational facilities on the island.

(c) The Dauphin Island area is the focal point for commercial fishing, shrimping, and oystering in lower Mobile Bay, the adjacent waters of Mississippi Sound, and the Gulf of Mexico, and there is no adequate harbor of refuge in the vicinity for the large number of small craft engaged in these activities.

(d) The waters surrounding Dauphin Island are excellent for recreational boating and fishing, but the absence of adequate harbor facilities in the area has tended to discourage the full enjoyment of these activities.

(e) Small boats engaged in fishing, shrimping, and oystering in Dauphin Island Bay and Mississippi Sound experience considerable difficulty in transferring their catches to freight boats from Bayou La Batre or elsewhere during rough weather; provision of a channel which would permit the freight boats to come alongside the small craft in the protected waters of Dauphin Island Bay, would eliminate many of the hazards now encountered.

(f) Commercial fishing craft operating in Mississippi Sound, lower Mobile Bay, and the Gulf would not be required to travel to distant harbors on the mainland during squalls if a suitable harbor of refuge were available in the vicinity of Dauphin Island, and a consequent saving in time and operating cost would be realized.

(g) A continuous channel from Mississippi Sound to the Gulf by way of Dauphin Island Bay would enable commercial and recreational boats operating in the Gulf to reach shelter more quickly, reduce the travel time for such boats normally based at Bayou La Batre, Coden, and Dauphin Island, and afford a more sheltered route from those places to the Gulf.

23. No monetary contributions to the cost of requested improvements were offered, but it was the opinion of those present that rights-of-way and spoil-disposal areas would be provided free of cost to the United States. A transcript of the public hearing accompanies this report.

24. *Commerce.*—The only out-bound commerce from Dauphin Island is fish and oysters caught in the adjacent waters and transferred to freight boats operating from the mainland. In-bound commerce consists almost entirely of living supplies brought in for the inhabitants of the island. These supplies are brought in by the mail boat which operates daily between Cedar Point, on the mainland, and the island, and by local residents returning in their own boats from Bayou La Batre, Cedar Point, or elsewhere.

25. Provision of the navigation facilities requested by local interests would doubtless contribute toward an increase in both the out-bound and in-bound commerce of Dauphin Island; however, the volume of such commerce would not be particularly significant or representative of the benefits to be derived from the improvements. The benefits from improvement of facilities for small-craft navigation in the vicinity of Dauphin Island would be reflected in the increased production of sea foods in the waters adjacent to the island, reduction in operating costs of commercial small craft, and the further development of recreational boating, fishing, and other related activities.

26. The production of sea foods in the waters adjacent to Dauphin Island is reflected in the records of freight traffic for Bayou La Batre and Bayou Coden, where most of the catch is processed and packed for distribution. Table 3 shows the quantities of sea foods brought in annually by commercial fishermen to Bayou La Batre from 1938 through 1947.

TABLE 3.—*Sea foods received at Bayou La Batre, Ala.*

| Year                          | Oysters in shell | Shrimp, fresh | Fish, fresh |
|-------------------------------|------------------|---------------|-------------|
|                               | <i>Tons</i>      | <i>Tons</i>   | <i>Tons</i> |
| 1938.....                     | 6,544            | 1,443         | 1,342       |
| 1939.....                     | 8,430            | 3,565         | 793         |
| 1940.....                     | 8,514            | 1,856         | 386         |
| 1941.....                     | 11,781           | 2,147         | 468         |
| 1942.....                     | 14,568           | 1,377         | 588         |
| 1943.....                     | 14,578           | 1,764         | 1,067       |
| 1944.....                     | 14,012           | 1,734         | 1,909       |
| 1945.....                     | 10,350           | 2,191         | 1,299       |
| 1946.....                     | 4,718            | 1,305         | 272         |
| 1947.....                     | 5,621            | 715           | 91          |
| Average annual (1938-47)..... | 9,912            | 1,810         | 822         |

Table 4 shows the quantity of sea foods brought in annually by commercial fishermen to Bayou Coden from 1945 through 1947.

TABLE 4.—*Sea foods received at Bayou Coden, Ala.*

| Year <sup>1</sup>             | Oysters in shell | Shrimp, fresh | Fish, fresh |
|-------------------------------|------------------|---------------|-------------|
|                               | <i>Tons</i>      | <i>Tons</i>   | <i>Tons</i> |
| 1945.....                     | 1,280            | 617           | 4           |
| 1946.....                     | 1,905            | 205           | 5           |
| 1947.....                     | 1,040            | 225           | 7           |
| Average annual (1945-47)..... | 1,408            | 349           | 5           |

<sup>1</sup> Records prior to 1945 not available.

27. *Vessel traffic*.—There are no accurate records of the number of boats that use Dauphin Island Bay. About 25 commercial fishing boats are owned by residents of the island and are regular users of the bay. In addition to these local boats, numerous boats of the commercial fishing fleet, consisting of about 400 boats normally based at Bayou La Batre and other mainland harbors, frequently use Dauphin Island Bay for anchorage during the fishing season. During the annual 3-day fishing rodeo at Dauphin Island, some 200 to 300 pleasure craft use the island as a base of operations; however, most of these anchor in the open Mobile Bay opposite the eastern end of the island unless rough weather impels them to seek sheltered harbors.

28. Boats composing the commercial fishing fleet are of various sizes and drafts. Those of less than 5 net registered tons range from 2 to 4½ feet in draft and can carry from 15 to 40 barrels of oysters, or 7 to 20 barrels of shrimp. Some 40 or 50 boats in the fleet have capacities of over 5 tons and are generally classified as freighters. These boats range in draft up to 7 feet loaded and carry from 300 to 500 barrels of oysters, or 150 to 250 barrels of shrimp. In general, the smaller boats engage in actual shrimping and oystering, and transfer their catches to the freighters which, in turn, deliver the sea food to Bayou La Batre or some other port for processing and shipping. This practice makes it possible for the smaller boats to remain at the fishing grounds longer without returning to port. The actual number of boats employed as freighters may vary from time to time, as many of the smaller boats prefer to carry ice and deliver their own cargoes

to the processing plants when sea food is plentiful and not too far from the processing centers.

29. Bayou La Batre, the principal processing center for sea foods caught in the areas contiguous to Dauphin Island and the permanent harbor for most of the boats engaged in this enterprise, is provided with a channel 6 feet deep. Congress has approved a 9-foot-deep channel at Bayou La Batre but has appropriated no funds for its construction. Table 5 shows the trips and drafts of vessels using the port of Bayou La Batre during 1948. Bayou Coden, also important as a port for commercial fishermen has been provided with a channel 4 feet deep. Table 6 shows the trips and drafts of vessels using Bayou Coden during 1948.

TABLE 5.—*Vessel traffic at Bayou La Batre, Ala., in 1948*

| Draft (feet)                | In-bound <sup>1</sup> | Out-bound <sup>1</sup> |
|-----------------------------|-----------------------|------------------------|
|                             | <i>Trips</i>          | <i>Trips</i>           |
| 5.....                      | 190                   | 51                     |
| 4.....                      | 1,311                 | 99                     |
| 3 and less.....             | 3,810                 | 5,161                  |
| Total.....                  | 5,311                 | 5,311                  |
| Net registered tonnage..... | 21,677                | 21,677                 |

<sup>1</sup> All vessels reported were motor vessels.

TABLE 6.—*Vessel traffic at Bayou Coden, Ala., in 1948*

| Draft (feet)                | In-bound <sup>1</sup> | Out-bound <sup>1</sup> |
|-----------------------------|-----------------------|------------------------|
|                             | <i>Trips</i>          | <i>Trips</i>           |
| 5.....                      | 37                    | 9                      |
| 4.....                      | 93                    | 29                     |
| 3.....                      | 2,654                 | 86                     |
| Under 3.....                | 1,621                 | 4,281                  |
| Total.....                  | 4,405                 | 4,405                  |
| Net registered tonnage..... | 13,455                | 13,455                 |

<sup>1</sup> Includes 2 barges. All other vessels reported were motor vessels.

30. *Difficulties attending navigation.*—The average depth in Dauphin Island Bay is about 2½ feet below mean low water, although there are pools with depths as great as 6 feet in the bay west of Point Chugae, as shown on the map accompanying this report. The entire eastern half of the bay is generally less than 3½ feet deep and lesser depths obtain within 500 feet of the shore line. Most of the commercial craft which use Dauphin Island Bay as a harbor anchor about 1,500 to 2,000 feet offshore, and operators of these boats must use skiffs in traveling to and from shore. The absence of any defined channel in the bay increases the difficulty of navigation and discourages the use of the bay for anchorage by boatmen unfamiliar with its waters. Also, there is considerable danger of being grounded at anchorage, especially during the winter months when prevailing north winds cause extreme low tides in the bay. Boatmen report that they have been left grounded frequently in the bay and have lost many hours of fishing time awaiting high tides.

31. *Special subjects.*—Provision of a channel and anchorage basin in Dauphin Island Bay would involve no questions of water power or questions other than those pertaining to navigation.

32. *Plan of improvement.*—Two plans of improvement, herein referred to as plans A and B, were selected for detailed study. In general, plan A consists of a channel from Mississippi Sound into Dauphin Island Bay, terminating at an anchorage basin along the water front of Dauphin Island village. Plan B would also provide a channel from Mississippi Sound to an anchorage basin along the water front of Dauphin Island village, but would provide, in addition thereto, a connection with the authorized project channel which crosses the eastern end of Dauphin Island. This plan would afford a continuous route from Mississippi Sound, through Dauphin Island Bay, and across the eastern end of Dauphin Island to the Gulf of Mexico in the vicinity of Fort Gaines, in addition to providing an access from Mississippi Sound to a harbor at Dauphin Island village. The two plans, which will be described separately in succeeding paragraphs, are shown on the drawing accompanying this report.

33. Plan A contemplates a channel 7 feet deep, 100 feet wide, and about 8,300 feet long, from the 7-foot hydrographic contour in Mississippi Sound to an anchorage basin 7 feet deep, 500 feet square along the shore of Dauphin Island Bay in the vicinity of Dauphin Island village.

34. Plan B contemplates a channel 7 feet deep, 100 feet wide, and about 13,350 feet long from the 7-foot hydrographic contour in Mississippi Sound to the western end of the authorized project channel for Dauphin Island Bay; enlarging the authorized channel from 4 by 40 feet to 7 by 100 feet between Dauphin Island Bay and the authorized anchorage basin north of Fort Gaines, about 6,000 feet; and a side channel 7 feet deep, 100 feet wide, and 3,300 feet long, terminating at an anchorage basin 500 feet square, of the same depth, to be located in the vicinity of Dauphin Island village.

35. *Aids to navigation.*—According to information furnished by the United States Coast Guard, navigation aids in the nature of lights and buoys required for the improvement contemplated under plan A could be installed at an initial cost of \$6,700, and maintained at a cost of \$400 annually. Comparative costs under plan B would be \$11,100 for installation and about \$700 annually for maintenance.

36. *Shore-line changes.*—Tidal currents in Dauphin Island Bay are negligible, and would probably not be appreciably altered by the improvements contemplated herein; therefore, no changes of the adjacent shore line are expected to result from these improvements.

37. *Estimate of first cost.*—The estimated first costs of the improvements contemplated herein are shown below. The material to be dredged consists mainly of mud and sand. Excavation quantities shown for the channels and basin include 2 feet for overdepth dredging and provide for side slopes of 1 on 5 in water cuts and 1 on 3 in land cuts. Costs shown include about 20 percent for engineering and contingencies.

## PLAN A

## (a) Federal first cost:

|   |          |
|---|----------|
| 1. Dredging channel (180,000 cubic yards, at \$0.20)----- | \$36,000 |
| 2. Dredging basin (100,000 cubic yards, at \$0.20)-----   | 20,000   |
| 3. Total first cost to Corps of Engineers-----            | 56,000   |
| 4. Navigation aids-----                                   | 6,700    |
| 5. Total Federal first cost and investment-----           | 62,700   |

(b) Non-Federal first cost-----None

## PLAN B

|  |           |  |
|--|-----------|--|
| (a) Federal first cost:                                    |           |  |
| 1. Dredging channels (530,000 cubic yards, at \$0.17)----- | \$90, 100 |  |
| 2. Dredging basin (100,000 cubic yards, at \$0.17)-----    | 17, 000   |  |
| 3. Total first cost to Corps of Engineers-----             | 107, 100  |  |
| 4. Navigation aids-----                                    | 11, 100   |  |
| 5. Total Federal first cost and investment-----            | 118, 200  |  |
| (b) Non-Federal first cost-----                            | None      |  |

38. *Estimate of annual charges.*—Annual charges on the improvements contemplated are computed as shown below. Maintenance of the channel and basin by dredging constitutes the principal annual charge. Inasmuch as the channels and basin contemplated herein would not be subject to any appreciable tidal flow, wave action, or littoral currents, it is believed that maintenance dredging once every 3 years would be adequate.

|  | Plan A    | Plan B     |
|--|-----------|------------|
| (a) Federal investment:  |           |            |
| (1) Estimated expenditure by Corps of Engineers for new work-----          | \$56, 000 | \$107, 100 |
| (2) Estimated expenditure by U. S. Coast Guard for aids to navigation----- | 6, 700    | 11, 100    |
| (3) Total Federal first cost and investment-----                           | 62, 700   | 118, 200   |
| (b) Federal annual charge:   |           |            |
| (1) Interest at 3 percent-----   | 1, 900    | 3, 500     |
| (2) Amortization (50-year life)-----                                       | 600       | 1, 100     |
| (3) Annual cost of maintenance dredging-----                               | 6, 000    | 15, 000    |
| (4) Annual cost of maintenance by U. S. Coast Guard-----                   | 400       | 700        |
| (5) Total Federal annual charge-----                                       | 8, 900    | 20, 300    |
| (c) Non-Federal investment-----  | None      | None       |
| (d) Non-Federal annual charge-----   | None      | None       |
| (e) Total Federal and non-Federal annual charge-----                       | 8, 900    | 20, 300    |

39. *Estimates of benefits.*—About 400 commercial fishing boats normally operate in lower Mobile Bay, Mississippi Sound, and the Gulf of Mexico off Dauphin Island during the shrimping and oystering season from August through April, or about 9 months each year. Shrimping in Mobile Bay and Mississippi Sound begins in August and ends in December. Shrimp fishermen are active in the Gulf from January to March. The principal oyster reefs in the general vicinity of Dauphin Island are between Heron Bay and Little Dauphin Island, and in Portersville Bay. Oystermen are active in these waters from September to May. Most of the sea food caught in this area is delivered to Bayou La Batre and Coden for processing, packing, and shipping.

40. About 75 percent of the commercial fishing fleet, or about 300 boats, are based at Bayou La Batre, Coden, and Dauphin Island, and it is estimated that some 900 men residing at these places are engaged in commercial fishing throughout the year. Bayou La Batre is the home port for most of the boats, however, about 25 commercial fishing craft base at Dauphin Island and are owned and operated by residents of Dauphin Island village.

41. For about 4 months during the shrimping and oystering season in lower Mobile Bay and Mississippi Sound, the fishing fleet operates in waters nearer to Dauphin Island than to Bayou La Batre and Coden,

and a harbor of refuge in Dauphin Island Bay would save about 10 miles travel each way for those boats which usually seek shelter at Bayou La Batre during rough weather. About 2 months each year, while part of the fleet is engaged in shrimping in the Gulf of Mexico, a harbor at Dauphin Island would reduce the distance of travel by 15 miles each way for boats seeking shelter from squalls and storms in the Gulf.

42. Frequent storms and squalls during the fishing season make it necessary for small craft to seek shelter in some accessible harbor of refuge. According to Weather Bureau records, small-craft warnings have been displayed an average of about 60 times a year at Mobile. Thundershowers are often forecasted as often as 90 times during the spring and summer, but squalls on lower Mobile Bay and Mississippi Sound cannot be recorded as they are frequently localized in small areas and may arise from any direction. It is estimated that storms or squalls of sufficient intensities to endanger small craft occur in the vicinity of Dauphin Island an average of five times a month during the fishing season.

43. The entire fleet of 300 boats would not be affected by all storms and squalls which occur during the fishing season, since many would already be in port at the time. There is the possibility, also, that rough weather may occur at times when shrimp are scarce and there would be little activity on the part of shrimp fishermen. It is estimated, therefore, that an average of about 100 boats find it necessary or expedient to seek shelter from storms in the bay and sound at least 20 times each season, and that a round-trip distance of 20 miles could be eliminated each time through provision of a suitable harbor of refuge at Dauphin Island. Of these boats, it is believed that the larger ones, or about one-third of the fleet, could use the authorized harbor at Fort Gaines, however, it would be extremely hazardous, if not impossible, for the smaller boats to navigate the exposed waters at the entrance to the Fort Gaines harbor, especially during stormy weather. Consequently, some 66 boats would save about 26,400 boat-miles, or 3,300 boat-hours annually if a harbor of refuge were provided in Dauphin Island Bay.

44. During January, February, and March, boats engaged in shrimping in the Gulf of Mexico off Dauphin Island (par. 39) are frequently forced to seek shelter from sudden storms or squalls in that area. In general, the boats used for shrimping and fishing in the Gulf are somewhat larger and more seaworthy than the remainder of the fleet which confines its activities to more protected waters. The authorized harbor at Fort Gaines would afford refuge for most of the larger boats referred to above, therefore, a harbor in Dauphin Island Bay would afford little or no additional advantages as a harbor of refuge for the Gulf fishermen.

45. Many of the larger fishing boats based at Bayou La Batre serve as freighters during the shrimp and oyster season (par. 28). These boats travel to the various fishing grounds and purchase the catches of the smaller fishing craft. The larger freighters can accommodate the full cargoes of about 15 small craft. This practice obviates the necessity for small boats to travel from the fishing grounds to Bayou La Batre, Coden, or other sea-food ports on the mainland each day, and thereby saves for them considerable fishing time.

46. When storms or squalls occur, or even when the waters are choppy it is difficult and often impossible for the small boats to transfer their catches to the freighters. As a result, the small boats which normally do not carry ice must make the run to port or lose their cargoes. A harbor in Dauphin Island Bay of sufficient depth to accommodate the freighters with drafts of 4 to 7 feet would make possible under most conditions the safe transfer of cargoes from the numerous small boats which operate in that vicinity. It is estimated that some 50 small craft which fish for shrimp and oysters in waters adjacent to Dauphin Island, and which depend largely on the freight boats as a means of disposing of their catch, would save an average of 20 round trips to the mainland each season, or an equivalent value of catch, if a harbor were available in Dauphin Island Bay. An average of 20 miles would be saved each round trip; at an average speed of 8 miles an hour, a total of 2,500 boat-hours would be saved by the 50 boats involved.

47. Depths in Dauphin Island Bay sufficient to accommodate boats with drafts in excess of 2 feet are available only at considerable distances from the shore. Consequently, boatmen who reside on Dauphin Island, and those who visit the island, must anchor their boats a thousand feet or more offshore and travel back and forth in skiffs. At least an hour is lost each round trip as a result of this inconvenience, and there is involved, also, the double handling of supplies, stores, equipment, or other items transported. In consideration of the 200 to 300 persons who reside on the island, and in further consideration of the boats owned locally and those which call at the island, it is evident that some remedy of the present condition would prove extremely beneficial to a large number of persons. Since an average of about 10 boats arrive and depart from the island daily throughout the year, a total of 3,650 boat-hours is consumed in travel between the shore and the boats anchored offshore.

48. The average annual quantities of sea foods received at Bayou La Batre and Coden, as shown in tables 3 and 4, represent the catch of about 300 boats that operate in the general vicinity of Dauphin Island. On the basis of current prices being paid to fishermen for oysters, shrimp, and fish, the average annual value of this catch would be about \$1,000,000, or \$3,300 a boat. It is estimated that the average fishing boat is engaged in actual fishing about 150 days, or 1,500 hours, during the entire season for fishing in waters adjacent to Dauphin Island; the value of sea foods taken would thus average \$2.20 a boat-hour. The 9,450 boat-hours (pars. 43, 46, and 47) now consumed in traveling to remote ports in times of storms, or in transferring cargoes and personnel between boats and shore, etc., would presumably be devoted to fishing if the requested improvement were provided. This added fishing time would result in an increased yield of sea foods valued at \$20,800. The authorized harbor at the eastern end of the island near Fort Gaines could be used advantageously as a harbor of refuge by many of the fishing boats operating in the Gulf of Mexico off Dauphin Island, or in lower Mobile Bay (pars 43 and 44); however, any savings or benefits therefrom would be additional to the above \$20,800 estimated as benefits attributable to the contemplated Dauphin Island Bay Harbor.

49. A continuous channel from Mississippi Sound to the Gulf of Mexico via Dauphin Island Bay, as contemplated under plan B (par.

34), would result in benefits in addition to those discussed in paragraphs 39 to 48. These benefits would be realized by boats engaged in shrimping and fishing in the Gulf of Mexico off Dauphin Island, and by some 200 to 300 pleasure craft which assemble at Dauphin Island each year during the 3-day deep-sea-fishing rodeo.

50. It is estimated that 50 commercial fishing boats from Bayou La Batre, Coden, and Dauphin Island Bay, are engaged in fishing in the Gulf of Mexico off Dauphin Island for about  $2\frac{1}{2}$  months each year (par. 39), and that these boats return to their respective home ports once each week, or an average of 10 times during the season. If a continuous channel from the sound to the gulf via Dauphin Island Bay were provided as contemplated under plan B (par. 34), about 8 miles, or 1 hour sailing time per boat, would be saved on each round trip between the Gulf and Mississippi Sound, a saving of 500 boat-hours per season for the 50 boats involved. At the average value of \$2.20 a boat-hour, the total annual value of the increased catch thus made possible would be \$1,100.

51. Pleasure craft which attend the annual rodeo at Dauphin Island would derive some benefits from a channel between Dauphin Island Bay and the Gulf; however, an anchorage basin or harbor of refuge near the rodeo headquarters at Fort Gaines would be of more importance and would afford greater benefits to such boats. Of the 200 to 300 boats which usually attend the rodeo, it is estimated that about 100 boats would make the round trip through the contemplated continuous channel once during the rodeo, with a resulting total saving of about \$200 in fuel and other operating costs. The total annual benefits creditable to a through channel would therefore be \$1,300.

52. Provision of a channel from Mississippi Sound to Dauphin Island Bay as contemplated under plan A (par. 33), would benefit the residents of Dauphin Island and other interests in many ways other than those discussed above; however, such benefits are difficult to evaluate. According to interests concerned with sea-food processing and packing, it seems very likely that one or more plants for this purpose would be located on Dauphin Island if a suitable access channel were provided. It is believed that such a project would tend to expand the present fishing industry in this general area rather than to institute competition with the existing established ports at Bayou La Batre and other mainland points.

53. The development of recreational facilities on Dauphin Island would doubtless be encouraged by the provision of a suitable harbor for small craft. This would afford an additional source of income to the residents of the island who now depend almost solely on fishing for a livelihood. Improved facilities for water transportation to and from the village would also afford the local residents an opportunity to improve economic conditions as a whole, and would provide a greater measure of insurance for the health, safety, and social welfare of the populace. Such benefits, while difficult to evaluate on a monetary basis, would probably exceed the benefits which would accrue only to the commercial fishing industry.

54. The total evaluated benefits (pars. 39 through 51) indicate that a total estimated annual saving of \$20,800 would be realized through provision of a channel from Mississippi Sound to an anchorage basin in Dauphin Island Bay as contemplated under plan A (par. 33), and

that additional benefits estimated at \$1,300 annually would accrue from provision of a through channel between Mississippi Sound and the Gulf of Mexico via Dauphin Island Bay as contemplated under plan B (par. 34).

55. *Comparison of benefits and costs.*—The estimated annual benefits from the improvement as contemplated under plan A are \$20,800 (par. 54), and the estimated annual charges of this plan are \$8,900 (par. 38), yielding a benefit-to-cost ratio of 2.34. Comparative values under plan B are \$22,100 annual benefits (par. 54) and \$20,300 annual charges (par. 38), indicating an over-all benefit-to-cost ratio of 1.09. It is pointed out, however, that the difference in annual charges of plan B over plan A is \$11,400 while the increase in benefits is only \$1,300 yielding a benefit-to-cost ratio of only 0.11 for the additional features. The favorable benefit-to-cost ratio under plan A is considered to be reasonably conservative in view of the additional benefits discussed in paragraphs 52 and 53, to which no monetary evaluation is assigned.

56. *Proposed local cooperation.*—In consideration of the benefits which would accrue locally through improvement of Dauphin Island Bay as herein contemplated, local interests should furnish necessary assurances that they will:

(1) Provide, without cost to the United States, when and as required, all necessary rights-of-way and spoil-disposal areas for the construction and maintenance of the project.

(2) Hold and save the United States free from claims for property damages that may result from the construction and maintenance of the project.

57. Local interests have expressed their willingness to cooperate fully in any improvement of Dauphin Island Bay by the United States. It is believed that no difficulties would be encountered in securing rights-of-way and spoil-disposal areas, as the improvement considered lies almost wholly within the waters of Mississippi Sound and Dauphin Island Bay and does not traverse any developed land area. There are a few small scattered oyster reefs of minor importance in the general vicinity of the proposed improvement, but it is believed that the contemplated channel can be dredged and spoil disposed of without appreciable damage to these reefs.

58. *Allocation of costs.*—The division of the initial costs and the costs of operation and maintenance among the Federal agencies and local interests concerned with the improvements contemplated herein are shown in detail in paragraphs 37 and 38.

59. *Coordination with other agencies.*—The following agencies and offices were duly notified of the proposals for improvement and of the public hearing in connection therewith in order that they might present their views or make other appropriate comments:

State of Alabama.

Federal Power Commission.

United States Public Roads Administration.

United States Fish and Wildlife Service.

United States Department of the Interior.

United States Geological Survey.

United States Public Health Service.

National Park Service.

Communications were received from representatives of the Federal Power Commission, the United States Fish and Wildlife Service, the United States Department of the Interior, and the National Park Service; however, the communications received indicated that these agencies had no official interest in the proposed study. No comments were received from the other agencies listed above.

60. *Discussion.*—The most favorable plan considered herein, to provide a channel from Mississippi Sound to Dauphin Island Bay, consists of a channel 7 feet deep, 100 feet wide, and about 8,300 feet long from the 7-foot depth contour in Mississippi Sound to an anchorage basin 7 feet deep and 500 feet square adjacent to the south shore of Dauphin Island Bay in the vicinity of Dauphin Island village, at an estimated initial cost of \$56,000 for dredging. That plan meets the desires of local interests. It is estimated that the improvements would result in an annual-evaluable benefit of \$20,800, and a benefit-to-cost ratio of 2.34. The benefits would accrue principally to owners and operators of small commercial fishing craft who earn a livelihood by fishing, shrimping, and oystering in the waters adjacent to Dauphin Island. All benefits evaluated were determined on the basis of increased production of sea foods, and savings in labor, fuel, and other operating costs which would accrue as a result of providing an adequate and convenient harbor in an area where commercial fishing is conducted on an extensive scale and where no other nearby harbors exist. The additional facilities for navigation considered herein would tend to encourage expansion of the fishing industry, and would improve the general economy and social welfare of the island populace.

61. The authorized project for Dauphin Island Bay (par. 19) provides for a 7-foot-deep entrance channel and anchorage basin at the eastern end of Dauphin Island near Fort Gaines, and a 4- by 40-foot channel from the anchorage basin to Dauphin Island Bay; however, no work has been done on this project. This harbor will be of considerable value to commercial and pleasure fishing craft operating in the Gulf of Mexico but will not serve the needs of Dauphin Island village populace or of craft operating in Mississippi Sound, particularly the oystermen. The only existing harbor improvement on Dauphin Island is a small basin near Fort Gaines constructed by the Coast Guard during the recent war (par. 20). This basin is no longer maintained and its capacity is limited to a small number of shallow-draft boats.

62. The need for a small-craft harbor in Dauphin Island Bay opposite the village will exist so long as the fishing industry is active in the waters of lower Mobile Bay and Mississippi Sound, and so long as a considerable number of persons, as at present, reside on the island and engage in boating and fishing. Construction of a bridge from the mainland to Dauphin Island would not diminish the need for a harbor of refuge; rather, it would tend to increase the importance of having adequate harbor facilities for small craft at the island.

63. Dauphin Island Bay is practically landlocked on the north, east, and south sides, and, if adequate depths were available, would afford a convenient and excellent protected anchorage area for all small craft operating in lower Mobile Bay and Mississippi Sound, and for small transient craft traveling the Gulf Intracoastal Waterway. The depth of 7 feet for the channel and basin as proposed herein

would be somewhat greater than necessary during normal tides for the majority of small craft expected to use the harbor; however, during the winter months the tides are extremely low in the area involved, and the depth provided would not be excessive. The larger boats, especially the larger freighters, could not operate economically in depths less than those considered herein, and the ability of these larger boats to navigate in Dauphin Island Bay is necessary to the full realization of benefits to be derived.

64. While this report deals primarily with the value of a harbor from the standpoint of commercial fishing, the fact should not be overlooked that some 200 to 300 citizens of Mobile County reside permanently on the island and have wholly inadequate means of transportation between the mainland and Dauphin Island. These people who are engaged principally in the fishing industry, contribute considerably to the general economy of the area, and it is reasonable to assume that their contribution would be much greater if better means could be provided for the full and unrestricted practice of their enterprise.

65. *Conclusions.*—The district engineer concludes that the most favorable plan for the improvement of Dauphin Island Bay to provide a channel connection to Mississippi Sound would consist of a 7- by 100-foot channel from the 7-foot hydrographic contour in Mississippi Sound to a 500- by 500-foot anchorage basin of the same depth adjacent to the south shore of Dauphin Island Bay in the vicinity of Dauphin Island village, substantially as shown on the accompanying map, at a Federal first cost to the Corps of Engineers of \$56,000 with \$6,000 annually thereafter for maintenance. The entire initial amount required should be made available in one allotment. The district engineer further concludes that the works to be undertaken by the United States should be contingent upon provision by local interests of the items listed in paragraph 56. He finds that the evaluable annual benefits expected to result from the project exceed its estimated annual cost in the ratio 2.34 to 1, and concludes that this favorable ratio augmented by other unevaluated advantages as discussed herein, warrants modification of the existing project by the United States.

66. *Recommendation.*—The district engineer recommends that the United States modify the existing project for Dauphin Island Bay, Ala., to provide, in addition to works already authorized, a channel 7 feet deep and 100 feet wide from the 7-foot hydrographic contour in Mississippi Sound to a 500- by 500-foot anchorage basin of the same depth adjacent to the south shore of Dauphin Island Bay in the vicinity of Dauphin Island village, substantially as shown on the accompanying map, with such modifications as the Chief of Engineers may deem advisable, at a first cost to the United States of \$56,000 (to be expended by the Corps of Engineers), with \$6,000 annually thereafter for maintenance in addition to that now authorized.

W. K. WILSON, Jr.,  
Colonel, Corps of Engineers,  
District Engineer.

[First endorsement]

OFFICE, DIVISION ENGINEER,  
SOUTH ATLANTIC DIVISION,  
Atlanta, Ga., July 24, 1950.

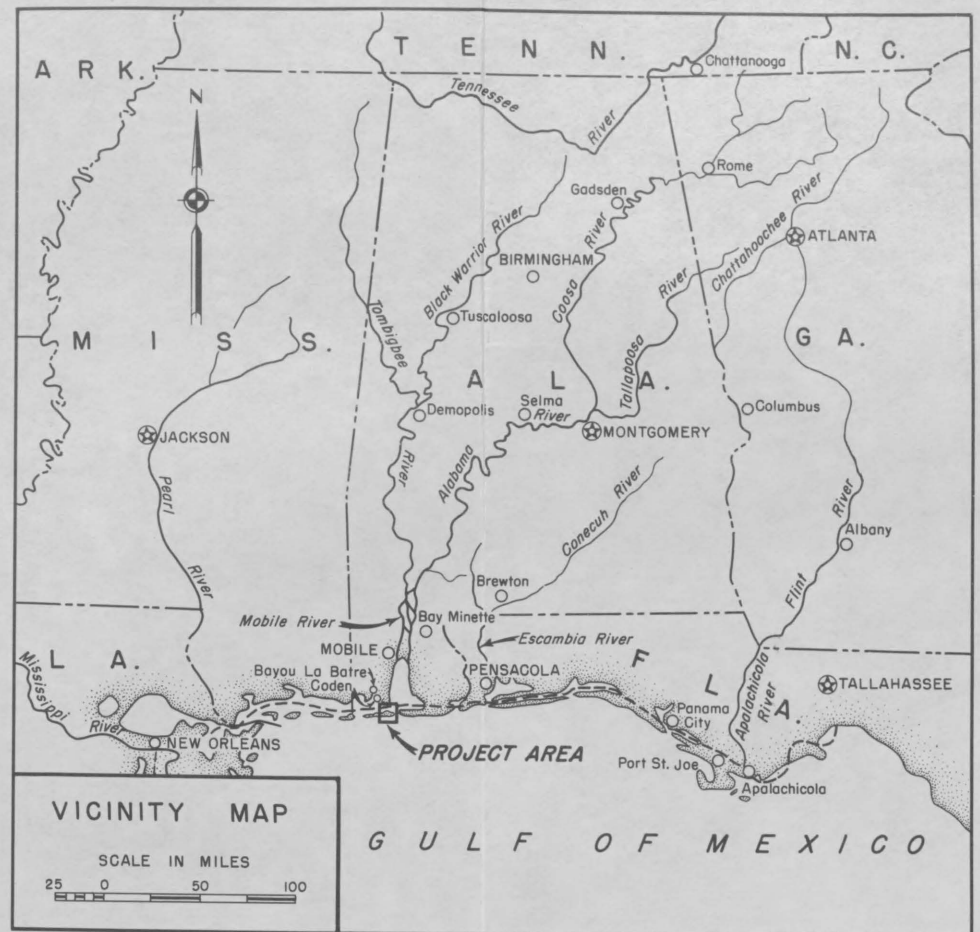
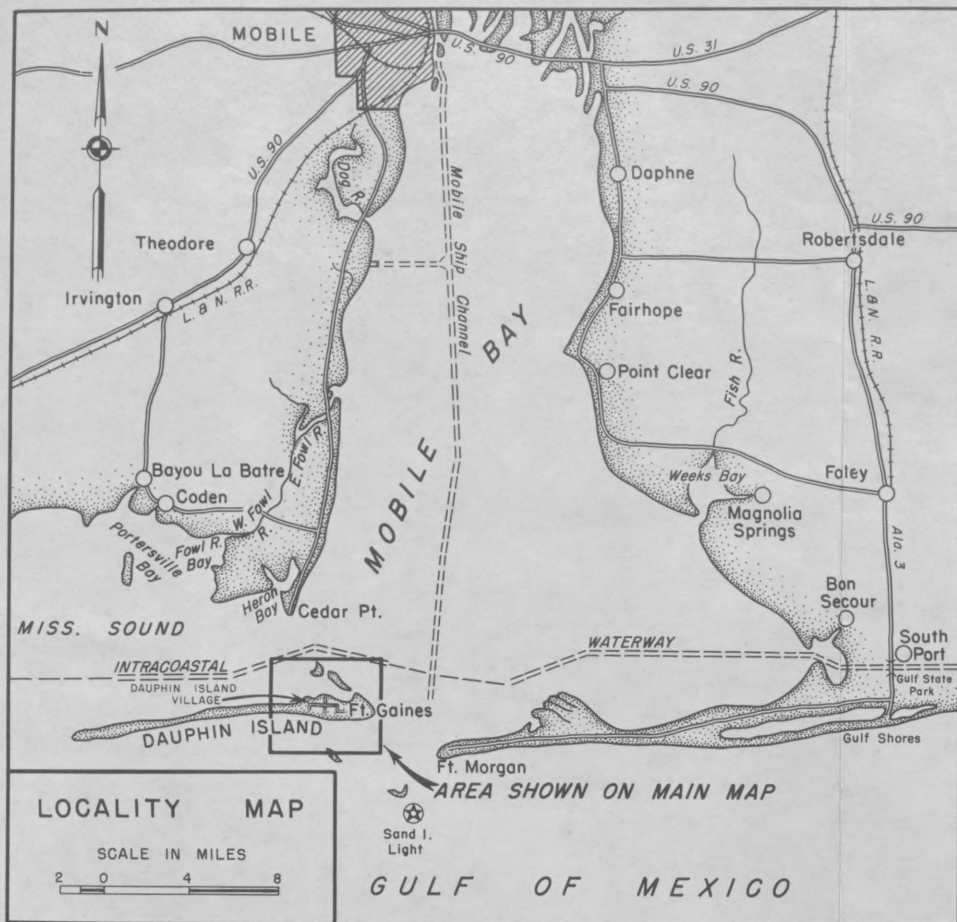
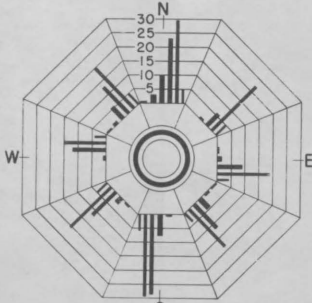
Subject: Survey of Dauphin Island Bay, Ala.

To: The Chief of Engineers, United States Army, Washington, D. C.

The division engineer concurs in the recommendation of the district engineer.

B. L. ROBINSON,  
Colonel, Corps of Engineers,  
Division Engineer.

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